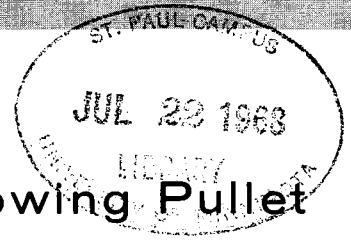


POULTRY NO. 41 4

M. L. SUNDE AND J. L. SKINNER

Feeding  
The Growing Pullet

Feed is the largest single item of expense in pullet production. It also affects the growth, appearance and in some cases, the habits of the bird. Therefore, it is extremely important that the ration used be nutritionally adequate for the pullet and at the same time, economical.

Current methods of rearing replacement pullets require that attention be given to such things as feather eating, hysteria, and cannibalism in addition to providing the basic requirements of feed, shelter, heat, and ventilation. Light has also become an important part of the management program for growing pullets (see Fact Sheet No. 39).

Restricting the rapid sexual maturity of the pullet by controlling the period of light or the intake of nutrients is an accepted practice.

Considerations of Feed Cost

The cost of feed represents a major part of the expense of rearing a ready-to-lay pullet. The total feed cost is affected by the cost per pound of feed as well as the number of pounds required. When diets high in fiber and relatively low in energy are used, more pounds are consumed by the growing pullet. In general, pullets will consume feed, if available, to meet their energy requirements. Some costs included in feed price are assessed to each pound regardless of ingredients used in the formula. Therefore, the most economical growth frequently comes from using lesser amounts of total feed. Costs must always be measured in terms of results. When feed affects performance or habits of the bird, the cost cannot be calculated until the job is done and a satisfactory product is at hand. Such items as restriction, pelleting, crumblizing, medication, etc. may increase labor costs or management problems. If so, these added expenses should be considered a part of the cost of using that ration or feeding system.

Systems of Feeding

- A. Restricting total feed intake: (often set at 70 to 90 percent of average unrestricted consumption)
1. Requires additional feeder space.
  2. Tends to increase cannibalism and feather eating problems.
  3. May increase nervousness of flock.

B. Restricting certain nutrients

1. Energy -- accomplished by adding fiber -- increases pounds consumed -- may increase feed cost -- may be essential under certain step-down-lighting programs -- increases capacity of digestive tract.
2. Protein -- may increase cannibalism -- can lower resistance to disease.
3. Lysine -- hard to formulate a ration low in lysine from common feed ingredients -- costly.
4. Antibiotics and growth factors -- will delay maturity only about 2 weeks.

C. Unrestricted feed intake

1. May be used with restricted hours of light.
2. Produces most economical weight gains.
3. Usually produces birds with fewer social problems.

Why Restriction is Desirable

In nature, the wild chicken was held back in its development by decreasing length of day (Fall) and sometimes short supplies of feed. With adequate supplies of feed and complete control of light in windowless houses, man is able to advance or retard the development of the pullet within a considerable range. The advantages of imposing some restriction on the sexual maturity (age of first egg) of the pullet are:

1. Usually produces a bird with larger frame and capacity when mature.
2. Reduces the number of eggs that are classed as "small."
3. May increase total egg production.
4. Usually results in lowered mortality in laying house.

Feeding Requirements of Growing Pullets

The developing pullet should always have easy access to an adequate supply of fresh, clean water. This will usually mean at least  $\frac{1}{2}$  linear inch of trough per bird or not over 20 birds per individual water cup or drinking nipple.

Feeding space should be at least 2 linear inches of feeder trough per bird. This should be increased by at least 50 percent if any restriction of total feed intake is practiced.

Feeders and waterers should be arranged so they don't unduly restrict the movements of the

birds around the brooder pen. They also should be located so that birds do not have to travel more than 15 feet to either one.

The nutritional requirements of egg-type pullets can be approximated as follows:

Age (weeks)	Protein (percent)	Productive energy (Calories per pound)	Calcium (percent)	Phosphorus (percent)
0-8	17-20	900-1,000	1.0	.7
8-12	15-17	800-1,000	.8	.55
12-21	13-15	700-1,000	.9	.55

The exact size and weight of pullets 21 weeks of age will vary with strains. Most producers want each pullet to weigh between 2.9 and 3.4 pounds at this time. The following table provides an indication of both the weight and the amount of feed consumed by egg-type pullets receiving a medium-high energy diet in unrestricted amounts.

Use energy levels as high as practical but bear in mind these may have to be lowered if feather picking and cannibalism become a problem.

The great range in energy levels permits restricting feed by the addition of higher levels of fiber.

### Formulas

The following listed examples will give satisfactory performance.

(1,000 pounds)	0-8 weeks		8-12 weeks		12-21 weeks	
	Starter		Grower		Developer	
	Energy		Energy		Energy	
Ingredients		High	Low	High	Low	
Ground corn	600	721	390	781	156	
Corn and cob meal	---	---	300.5	---	600.5	
Soybean meal	260	180	160	150	145	
Wheat middlings	---	---	50	---	---	
Alfalfa meal (17%)	30	50	50	20	50	
Fish meal	20	---	---	---	---	
Meat scrap	40	20	20	20	20	
Dried whey	20	---	---	---	---	
Limestone	5	10	10	10	10	
DiCalcium phosphate	6	10	10	10	10	
Salt	4	4	4	4	4	
Fat	10	---	---	---	---	
Methionine	1	1	.5	1	.5	
Vitamin premix*	4	4	4	4	4	
Antibiotics**	+	+	+	+	+	
Coccidiostat***	+	+	+	?	?	

\*Vitamin premix (per 1,000 pounds)

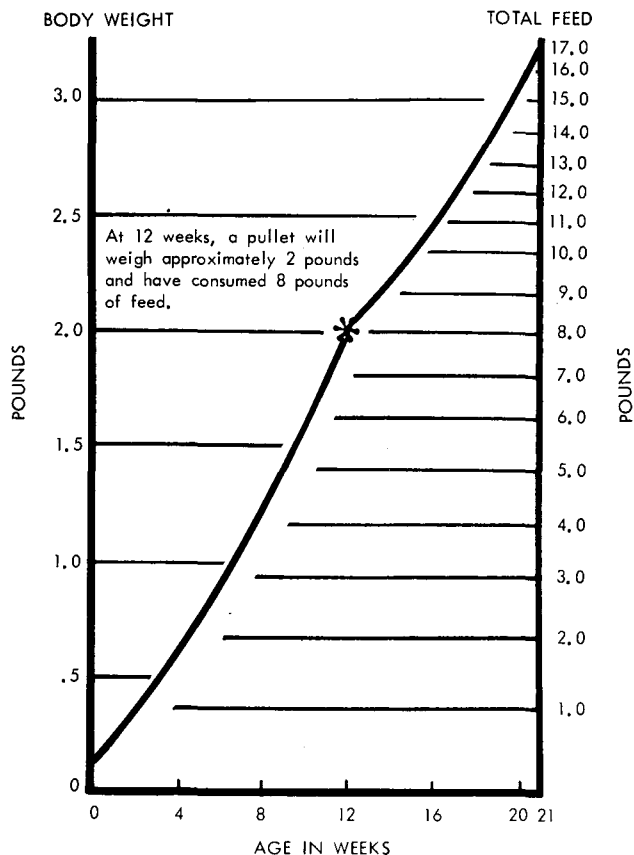
Supplementation for chick starter: Vit. A 2,250,000 I.U.; Vit. D<sub>3</sub> 400,000 I.C.U.; Riboflavin 1 gram; Niacin 14 grams; Ca. Pantothenate 2 grams; Choline Chloride 195 grams; Vit. B<sub>12</sub> 15 mgs.; Manganese Oxide 90 grams.

Supplementation for grower and developer (per 1,000 pounds): Vit. A 1,800,000 I.U.; Vit. D<sub>3</sub> 400,000 I.C.U.; Riboflavin 1 gram; Manganese Oxide 45 grams; Vit. B<sub>12</sub> 5 mgs.

\*\*An antibiotic will usually prove beneficial when fed at the rate of 2-10 grams per ton continuously.

\*\*\*Coccidiostats are recommended for the starting period and may be necessary during the growing period. Use a nationally advertised product according to the manufacturer's directions. Cage-started and grown pullets will normally not need a coccidiostat.

RATE OF GROWTH AND FEED CONSUMED BY GROWING PULLETS



This Poultry Fact Sheet is one in a series produced jointly by faculty and staff members of the University of Minnesota and the University of Wisconsin. Members of both institutions cooperated in the planning and production of the series.

Issued in furtherance of cooperative work in agriculture and home economics, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Roland H. Abraham, Director of Agricultural Extension Service, University of Minnesota, St. Paul, Minnesota 55101. 3M--5-68